



**NPDES FAQ's on developing effluent limit guidelines for treating flowback waters talks about UIC seismicity**

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**Phil,**

**This is from their draft FAQs, and I think you may want to offer some suggestions for revising it.**

**Underground Injection of Flowback and Produced Water**

Disposal of flowback and produced water via underground injection is regulated under the Safe Drinking Water Act's Underground Injection Control (UIC) program. Most states with oil and gas activities have been authorized by EPA to run the UIC program and permit disposal wells. On some tribal lands and in a few states, including Marcellus shale states such as Pennsylvania, EPA is responsible for permitting these wells, and the Agency is receiving an increasing number of permit applications for disposal of shale-related wastewater via injection well. The increased use of underground injection for large volumes of production water poses new challenges to state and federal permitting authorities. Hydraulic fracturing itself is not a known cause of induced seismicity. However, EPA is aware of the potential for the injection of large volumes of fluids to result in induced seismicity. This occurred recently in Arkansas where injection into brine disposal wells caused earthquakes up to 4.7 on the Richter scale. Recently, the Arkansas Oil and Gas Commission proposed to prohibit new waste disposal wells in the earthquake-prone area in the Fayetteville Shale gas zone in Faulkner and surrounding counties. In addition, two wells identified as the source of the earthquakes were shut down.

Given this documented potential issue and the increasing number of shale gas-related disposal wells, EPA is working with federal partners such as USGS and also with states to conduct an evaluation of technical measures that can be taken, under existing regulatory programs, to reduce the potential for induced seismicity to occur as a result of injection of large volumes of fluids. Additional background information on injection and earthquakes potential can be found at:

<http://earthquake.usgs.gov/learn/faq/?categoryID=46>

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